Navy Sparing

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N412
11 January 2005

Agenda

- Background
- Wholesale Sparing
- Aviation Retail
- Maritime Retail
- Initiatives

Spares - Background

- Spares are segmented into two categories:
  - Wholesale
    - Replenish retail requirements
    - Provides mat'l not "allowanced" at retail
    - Support depot maintenance
    - Navy Working Capital Fund managed
  - Retail
    - With end item
    - Tied directly to procurement (APN-6/OPN-8/WPN-6)

Wholesale System Characteristics

- Managed by Naval Inventory Control Point (NAVICP)
- Nearly four hundred thousand parts
- Diverse customer base
- Widely varying demand patterns
- Install base varies from 2 platforms to hundreds of platforms
- Wide range of prices
- ***Impact on readiness***

NAVICP Inventory

Aviation - 121,000 NSNs

$15.8B Annual Proc/repair budget

Maritime - 256,000 NSNs

$4.1B Annual Proc/repair budget

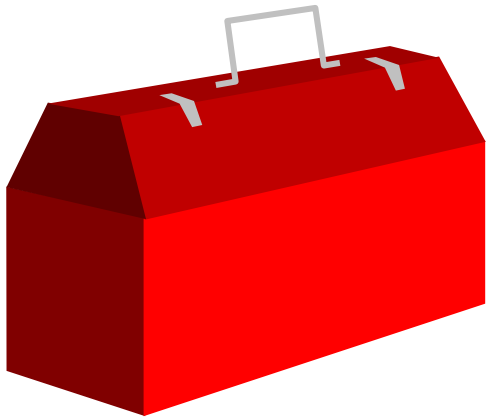
Requirements Determination Objectives

- Support Operational Availability objectives
- Minimize total cost to Navy
- Provide material when and where required

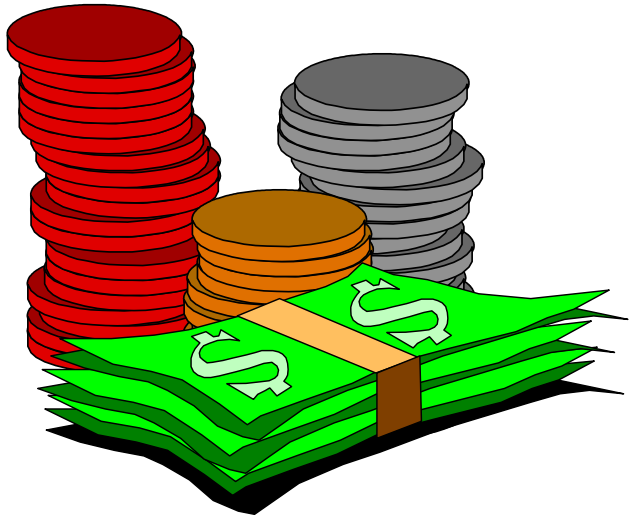
Wholesale Inventory Model

- Minimize the Total Variable Costs (TVC) of holding, ordering and customer shortages for a stated objective...i.e. ;
  - 85% SMA
  - 21 days average wholesale delay time
  - 90% Operational Availability
- Wholesale inventory model uses facts and formulas to represent each component of “TVC”
- Formulas are balanced against each other
- Cost minimization occurs at balance point

Premise.....



Repair When Possible



Procure When Necessary

When To Order

- Place next order when inventories drop to Reorder Level (ROL)
- “ROL” is amount of material needed to meet demand until next stock arrives
- Composed of:
  - Stock to cover demand during procurement and repair lead time
  - Safety stock
  - Replacement stock due to wearout (attrition stock)
- Offset by:
  - Repairs during lead time…regenerations (REGN’s)
- Formula for ROL:
  - ROL = Lead time Demand - Lead Time REGN’s + Demand During Repair Time + Safety Stock

How Much To Order

- Balance ordering and holding costs
- Ordering: Administrative cost to buy, setup costs
- Holding: Price, interest, obsolescence, storage
- Should be minimized i.e. least economic cost
- Economic Order Quantity (EOQ)
  - Amount of material to order at ROL that balances ordering and holding costs
  - EOQ = $\sqrt{\frac{2 * \text{attrition demand} * \text{cost to order}}{\textit{holding costs} * \textit{price}}}$

When To Repair

- Repair next batch of NRFI material when on-hand RFI assets drop below repair level
- Repair Level (RL):
  - Amount of material needed to meet demand until next repaired stock arrives
- Composed of:
  - Demand during Repair Turn Around Time (RTAT)
  - Safety Level
- Formula for RL:
  - RL = RTAT Demand + Safety Stock

Safety Levels

- Required to protect against logistic process variability
  - Demand variability
  - Lead Time variability
  - Repair Time variability
  - Attrition Rate variability

- Key determinant of inventory performance
  - SMA, A/O, ACWT…numbers & percent misses, Backorder Delay Time

Mitigation efforts

- Aviation developed Statistical Demand Forecasting
  - SPC targets items for re-forecasting
  - Demand spikes trigger manual reviews
  - 5 years of demand history
  - Graphic display of demand patterns
  - THF data available
  - View demand pattern by UIC
  - For active non-program related items only
  - More stable forecasts, reduced churn

Mitigation efforts

- Maritime - developed better trend detection technique - Kendall's "S"
  - Much better at finding Trends than old UICP
  - Passes common sense test
  - Normal forecasting can concentrate on stable forecast

Demand Forecasting
What's Left to Do?

- Combine SDF and Kendall into UICP
- Identify different demand patterns example:
  - High demand - low variability
  - One large demand observation every 3 to 4 years
- Match forecasting technique to demand pattern

Aviation Planeside Inventory

- Inventory positioned on ships and at air stations / Marine activities to support intermediate maintenance / local operations
- Inventory built to cover endurance period without re-supply and time for re-supply from wholesale system
- Customer requisitions filled immediately ~75% of the time from planeside inventory

Bottom line: Accurate Allowance + Filled Allowance = Backbone of Naval Aviation

Aviation Planeside Inventory

Definitions

- Aviation Allowance Lists
  - Material required to support planned aircraft baseload, based on maintenance capability, for a specified period of time

- AVCAL (Aviation Consolidated Allowance List)
  - Allowance lists for material to support embarked aircraft aboard CVs and L-ships for a 90- day endurance period at wartime flying hours

- SHORCAL (Shore based Consolidated Allowance List)
  - Allowance lists to support shore sites for a 30-day endurance period at peacetime flying hours

Aviation Planeside Inventory

Marine Aviation Logistics Support Package (MALSP)

- FISP (Fly-in Support Package)
  - Allowances to support specific Type/Model/Series (T/M/S) aircraft for the first 30 days of combat
- CSP (Contingency Support Package)
  - Allowances to support specific T/M/S/ for a 90-day endurance period
- FOSP (Follow-on Support Package)
  - Allowances which do not initially deploy to the area of operation.

Aviation Allowance Process

The Rules

…61% Fully Mission Capable
N881 Memo dated 19 Jun 1993

- Guidance CNO Instruction 4441.12C
  - "O" Level - Remove and Replace … RBS Level to Support CNO Readiness Goal
  - "I" Level - Fix Protection Level @ Fixed Endurance Le

	Flying Hours	CWT	Endurance
CV / L-Ships	War Time	25	90
MALS	War Time	25	90
Overseas P-3	War Time	25	90
Overseas NAS	Peace Time	25	60
CONUS NAS	Peace Time	23	30

Aviation Allowance Process

The Tools

Weapon System Individual Planning Document

- Qty and Type Of Aircraft by Site

Site Factors

- Auth Flying Hours By A/C Type
  - Peacetime
  - Wartime

Aircraft Equipment List

- Specific A/C Configuration by site
- Detailed Equip Candidate file

Weapons System File

- Top-Down Breakdown of Weapons systems
- Starts with initial Provisioning rates
  - updated by AV-3M data

- Planned maint. Capability and Operating hrs
- Prior off-site Attrition, on-site Repairs and

Common Rates Computation System

Common Allowance Development System

Aviation Allowance Process

The Model

Aviation Readiness Requirements Oriented to Weapons Replaceable Assemblies (ARROWS)

Readiness Based Sparing (RBS)

- **Allowances Based on:**
  - **Specified CNO T/M/S goals**
  - **Wholesale resupply time**
  - **Failure rates**
  - **"I" level capability**
  - **Operating tempo**
  - **Cost**

O Level - PAOGD

RBS Optimizes Cost Effective

Retail Inventory Management for Aviation (RIMAIR)

- **Allowances Based on:**
  - Demand
  - Endurance period
  - Fixed protection each line item
  - Does not address MC/FMC goals
  - No mission essential/cost trade-offs

I Level - PAGGD

Aviation Allowance Process

How it Comes Together

Weapon System File

3-M/System Usage

Outfitting Directive
(Tailored AECL)

WSPD
TMS/Qty/Hours

Candidate File

Readiness Goals/Costs
(RBS)

CRCS/CADS ARROWS

Site IMRL
(Maintenance Capability)

Allowance → **Conferenc** → **Final Allowances**

Aviation Allowance Process

Critical Building Blocks

Planeside Allowan + **Local Repair** + **Wholesale Resupply**

- **Off-The-Shelf Fill Rates**
- **Turn-Around-Time Performance**
- **Returns to Depot**
- **Logistics Response Time**

Is Allowance Planeside?

Is Local Repair Sustaining the Allowance?

Is Wholesale Back-up Inventory in Place?

Readiness Based Sparing to CNO Goals

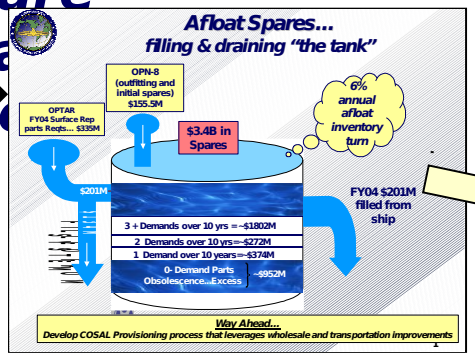
Establish the Right Plan
Fund the Requirement
Meet the Goals

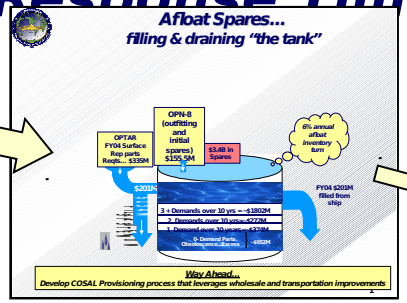
sponse Time & Inventory Positioning = Readin

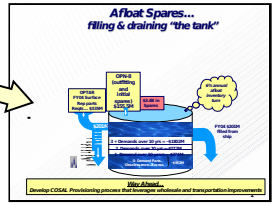
Maritime Spares … The Right Mix

➢ **Increased Availability and Decreased Response Time Flow into Decreased Shipboard Allowances…**

Increased Wholesale Spare Ava… + Decreased Logistics Response Time = Lower for Shipboard Par…



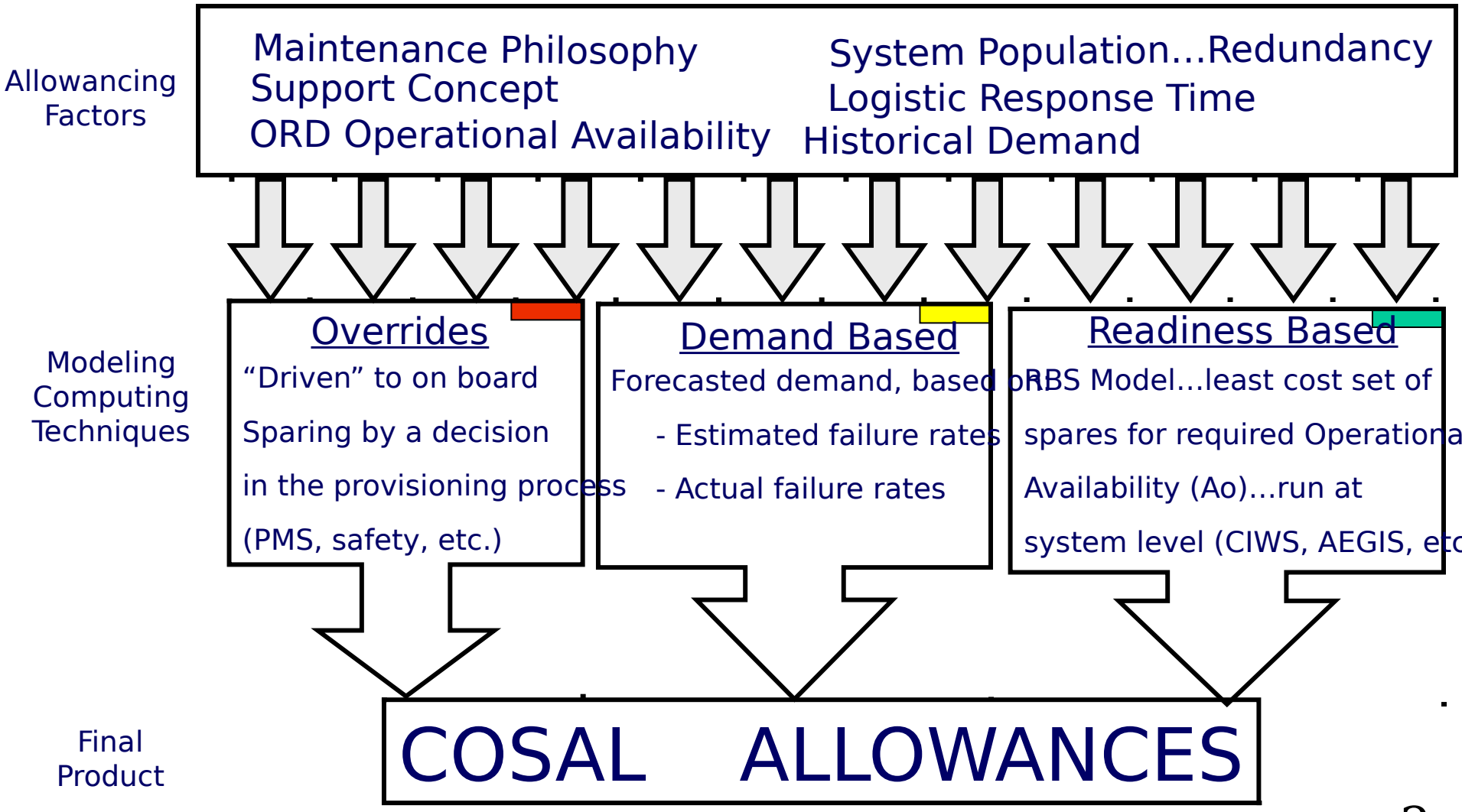




Leveraging PBLs, bett… processes, and taking risk to make a leaner COSAL…

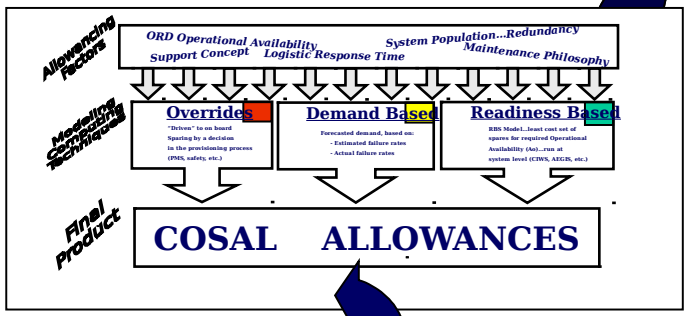
More robust wholesale response paves the way to leaner shipboard inventories

Making COSAL Allowances



Making COSAL Allowances

- **Allowance Computation**



- **Timing...**

MSD

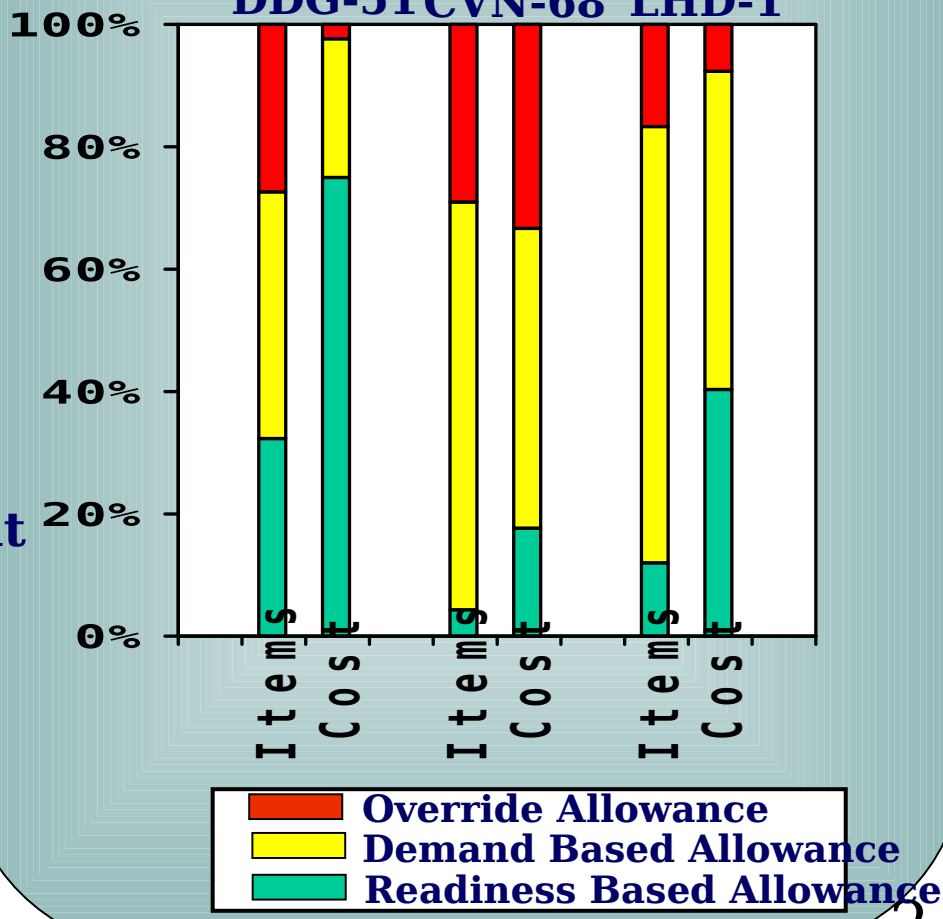
Initial | **Sustainment**

- **SCN** (Pre-delivery)
  OPN-8(New system)
- **OPN 8** (Maintenance)
  SCN (Refueling Overhaul)
  O&MN (Shipboard Replen)

Navy Material Support Date

Output...

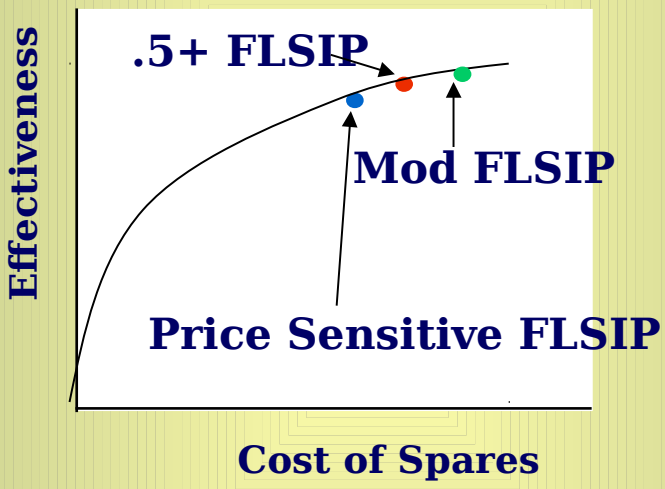
COSAL Composition Examples...



Measuring Risk...

Demand Based Allowances

("FLSIP" - Fleet Logistic Support Improvement Pr

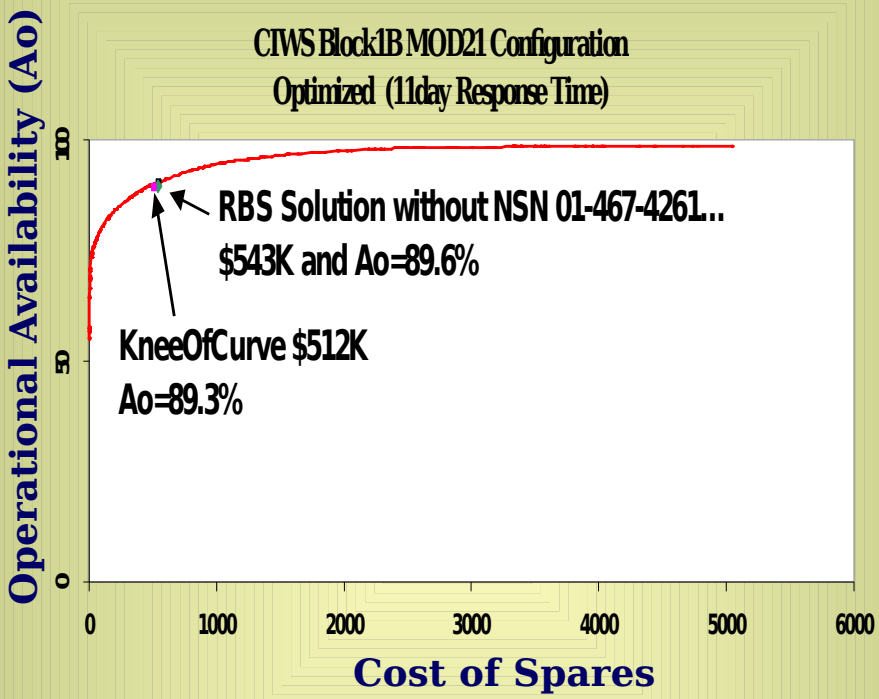


- Risk is measured in effective

...each item removed is a potentia

down the effectiveness curve

Readiness Based Allowan

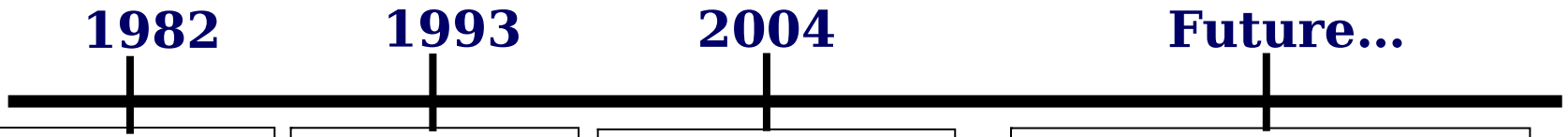


- Risk is measured in Ao...

...each item removed is a potential

the operational availability curve

Managing Risk...Demand



MOD FLSIP

1 Demand in 10 Years... cuts for allowance

.5+ FLSIP COSAL

1 Demand in 2 Years... cuts for allowance

Price Sensitive

< $1,000 Item - 1 Demand in 2 Years...cuts for allowance

> $1,000 Item - 4 Demands in 1 Year ...cuts for allowance

- Exploit the opportunities to cut shipboard allowances based upon decreased resupply time with wholesale PBL performance
- Allowance Reconciliation Tool
- Ship Class Replacement Factors
- Centralize both pre- and post-MSD allowancing processes at NAVICP

Reductions:
25% Line Item
25% Cost

$200M Saved

4% Effectiveness Reduction

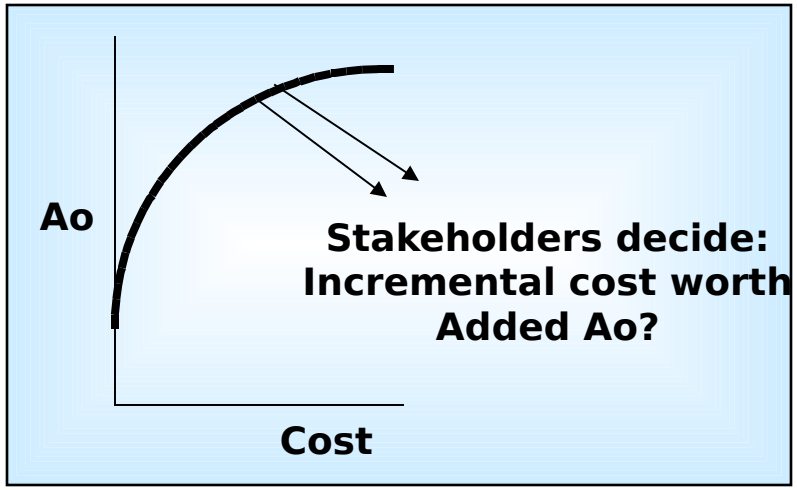
Reductions:
3% Line It
14% Cos

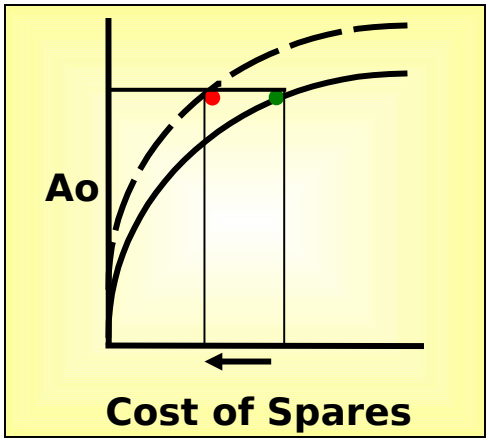
$39M Proj Savings

2.5% Proj Effectiveness Reduction

As the Navy becomes less risk adverse, stock levels afloat can decrease.

Managing Risk…RBS





- RBS to affordable Ao (knee of curve)
  - Max marginal rate of return for investment
  - Risk of sparing below OPNAV approved Ao
- Expanded use of Multi-Echelon RBS
  - Optimizing mix of wholesale & afloat
  - Stock high cost/low demand items @ ashore… reduces afloat assets/cost
  - Maintaining Operational Availability (Ao)
- Leveraging PBL performance to reduce afloat spares
  - Reduced OS&T & Improved reliability requires fewer shipboard spares to achieve Ao

What's next?

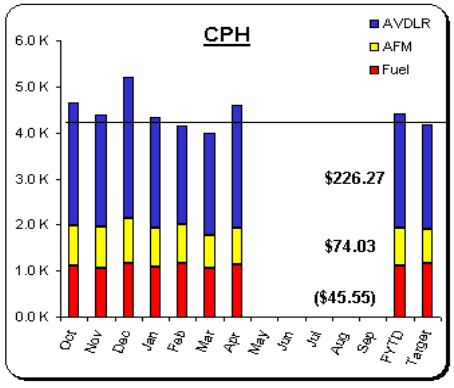
Transforming traditional allowance computations

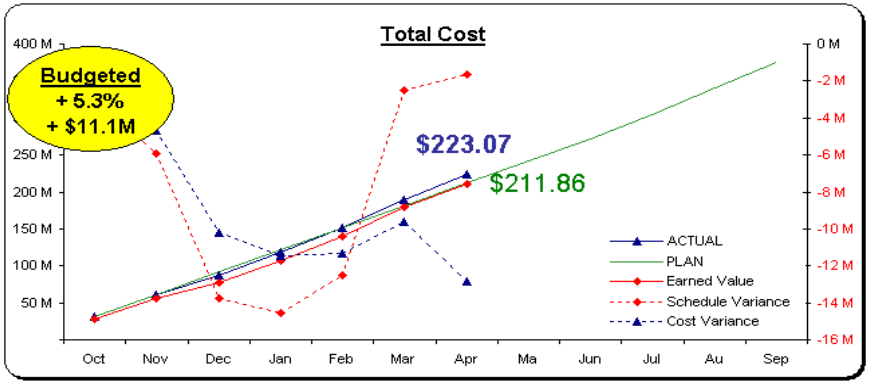
- New platforms
  - Allowance to changing maintenance philosophy
    - Smaller crew = maintenance ashore = fewer spares afloat
  - Increase use of PBLs at inception
  - Invoke Price Sensitive FLSIP model at outfitting
- Existing platforms
  - Invoke Price Sensitive FLSIP model for sustainment allowances
  - Allowance to maximum utility Ao at knee of curve for RBS systems
  - Use Ship Class Replacement Factors vice Fleetwide factors
  - Allowance Reconciliation Tool
- Overall approach
  - Working with Maritime Allowance Working Group on risk profile
  - Collaborate with NAVSEA, PEOs to link pre and post MSD sparing
  - Increase multi-echelon RBS sparing

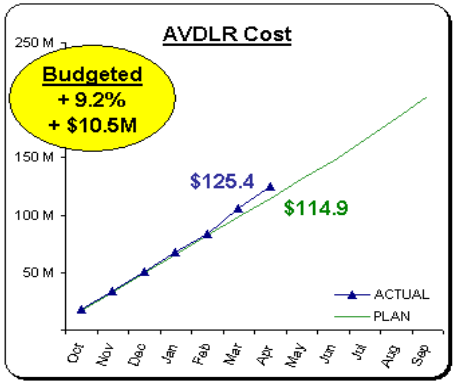
Initiatives

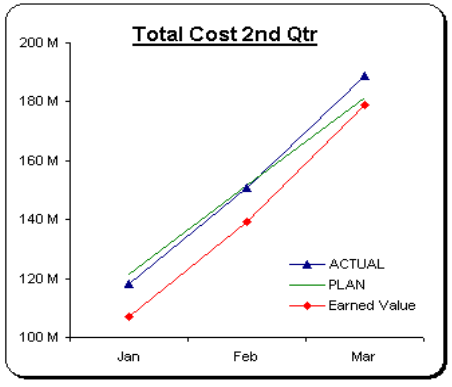
- Multi - Indenture Allowance
  - Readiness/cost trade-offs between indentures (e.g. WRAs/SRAs)
  - Prototypes underway for NAS Lemoore and a CV deckload
  - CRCS/CADS implementation provided initial capability
- Multi - Echelon Allowance
  - Key to Single National Inventory
  - Optimizes placement of material between wholesale/retail
  - Requires IT system able to integrate
- Enterprise Resource Planning (ERP)
  - Current SMART implementation does not address allowancing
  - Converged ERP – single configuration and maintenance database many users

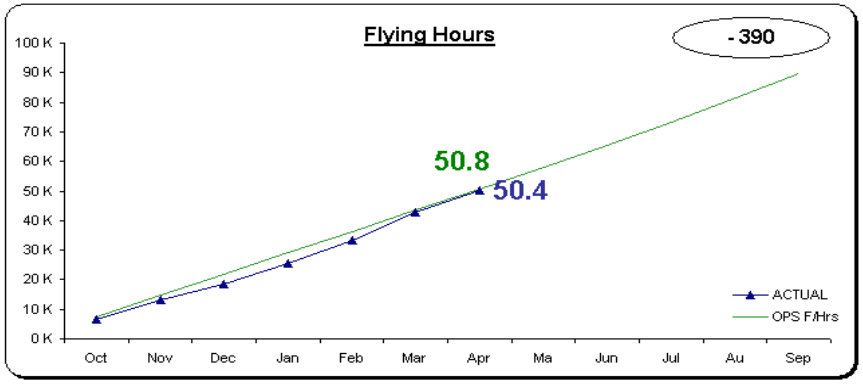
CSFWP Cost Review
AFAST Data

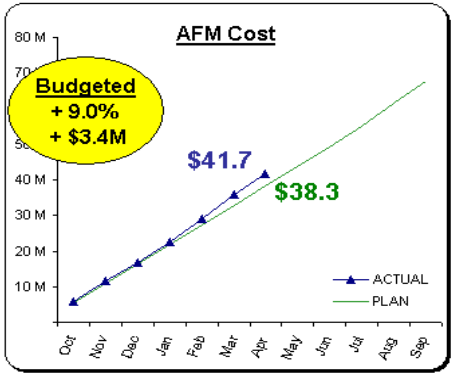


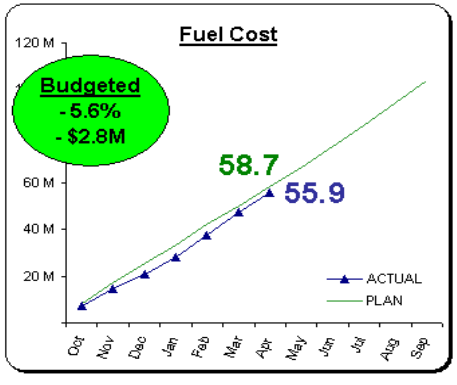


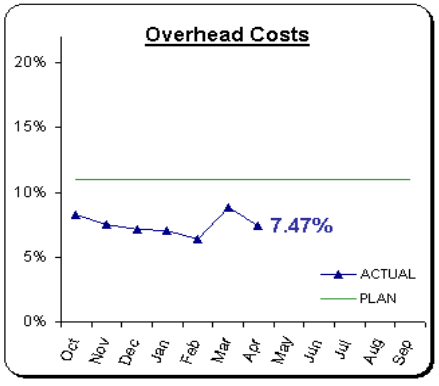


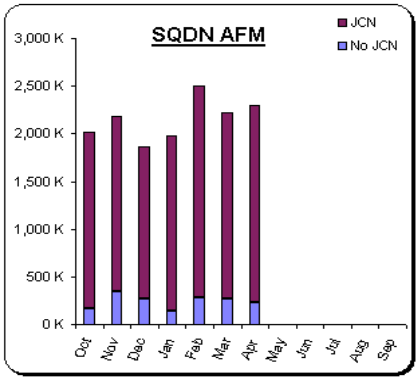


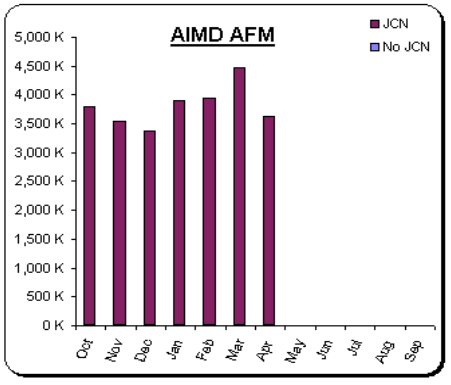




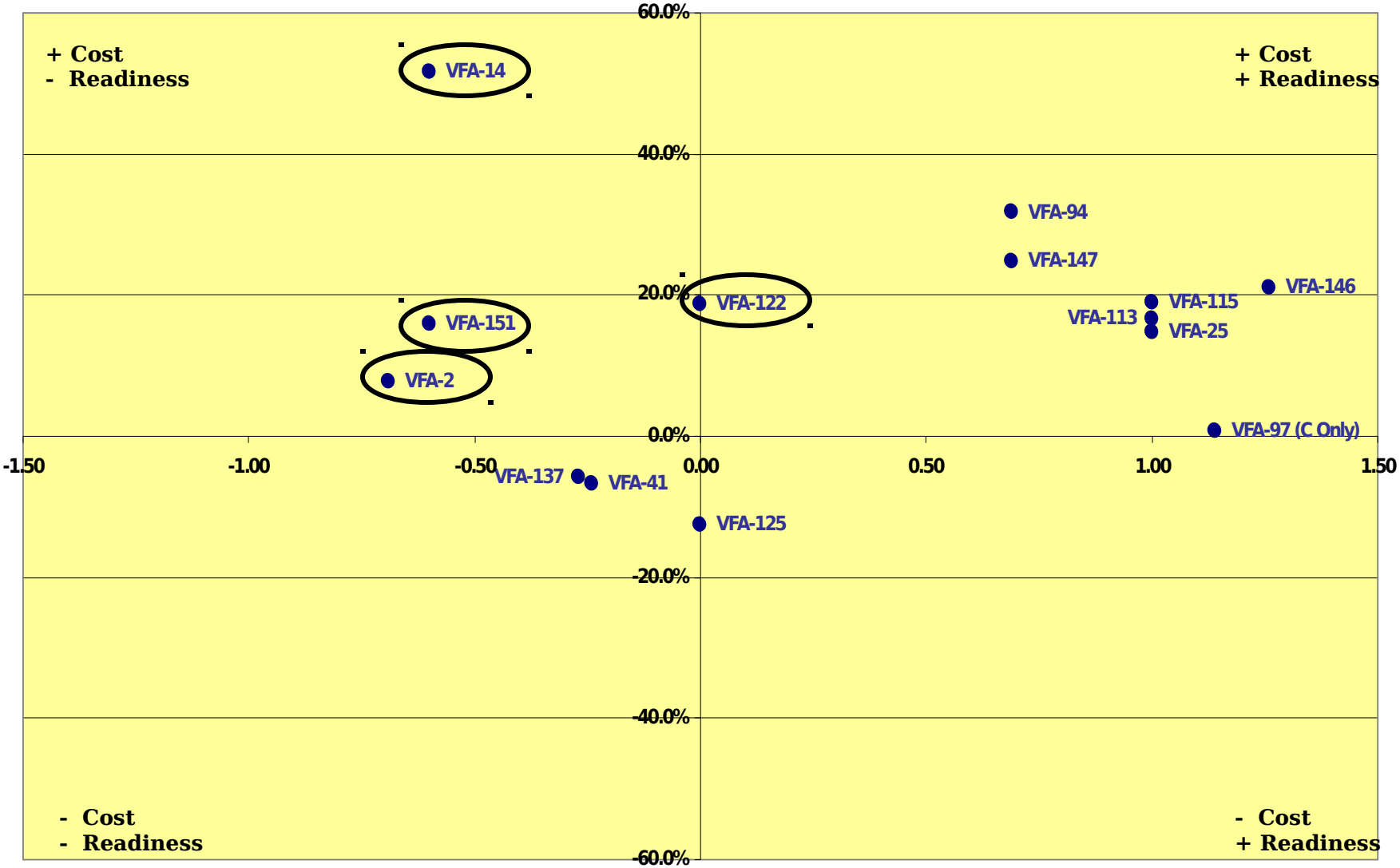








CSFWP FA-18A-F
Cost/Readiness Rating



Maintenance Plan Reviews

	Maintenance Plan Review				Cog AIMD				$18,024,265
Acft	Nomenclature	NIIN	Current Net	SM&R Code	Small IMA ICRL	Major IMA PAC ICRL	Major IMA LAT ICRL	FY 03 Usage	Potenial Avoidnace
E-2C	Propeller	00-201-9809	$166,611	PAOGD	C3	C3	C3	35	$4,665,108
C-2	APU	01-364-7323	$35,133	PAGGD	C3	C3	C3	23	$404,030
E-2C	Evaporator	01-318-9077	$59,424	PAOLD	X1	R5	C1	12	$356,544
E-2C	Nav Computer	01-432-2467	$65,985	PAOGD	X1	C3	RR	9	$263,940
E-2C	Heater Assembly	01-313-0146	$62,913	PAOLD	X1	R5	C3	5	$125,826
J-52	Compressor	01-466-0084	$143,197	PAHHD	X1	X1		81	$2,899,739
J-52	N1 Compressor	01-236-4761	$108,260	PRHHD	X1	X1		72	$1,948,680
J-52	T-1 Turbine	01-350-6640	$140,431	PAHHD	X1	X1		47	$1,650,064
EA-6 Equip	RAM Governor	00-409-1557	$17,304	PAGGD	X1	X1		94	$406,644
J-52	COMB CHAMBER	01-353-8344	$2,975	PAHHD	X1	X1		225	$167,344
FA-18E/F	E/F Generator	01-455-3692	$81,727	PAOGD	TBD	C1	X1	52	$1,359,937
FA-18C	Servocylinder	01-351-3373	$19,180	PAOGD	C3	C3	C3	76	$262,382
FA-18	Servocylinder	01-343-7026	$13,838	PAOGD	C3	C3	C3	166	$525,000
SH-60F	Cable Assy	01-467-4741	$21,159	PAOGD	X1	C3	X1		$194,663
H-60	Displacement Gryo	00-159-2298	$5,293	PAOGD	X1	C3	X1	X1	$119,886
H-60	Bladefold Actuator	01-242-9588	$17,275	PAOGK	X1	X1	X1	X1	$82,920
H-60	Amplifier	01-164-4297	$21,065	PAOHK	X1	X1	X1	X1	$22,118
									$419,588
T-34	Pressure Module	01-419-4805	$105,255	PAHHD	NA	C3	X1	50	Admin
S-3B	CSD	01-113-3259	$15,165	PAGGD	C3	C3	X1	173	Admin
S-3B	Generator	01-047-1348	$8,388	PAGGD	C3	C3	X1	224	Admin
TF-34	Compressor Rotor	01-372-6544	$83,389	PAHHD	NA	C3	X1	25	Admin
S-3B	Fuel Control	01-021-8113	$38,637	PAODD	X1	X1	X1	72	Admin
S-3B	APU	01-411-9602	$55,690	PAOGD	X1	C3	C3	102	$57,610
P-3C	Propeller	00-887-1944	$117,261	PAOOD	C1	C3	C1	42	$586,305
EP-3	Transport, Mag	01-343-2947	$24,132	PAOHK	X1	X1	NR	26	$627,432
P-3C	Amplifier	01-440-6604	$19,631	PAOOK	A1	A1	C3	58	$569,299
P-3C	Prop Control	00-868-8836	$46,314	PAOOD	X1	C3	C1	62	$231,570
P-3C	Control, Interface	01-504-6757	$77,636	PAODK	X1	NR	NR	1	$77,636

Reliability Reviews

Reliability Review			Cog TYPEWING / APML				$13,245,978
			Current	CY 03	CY 02	Percent	Potential
Acft	Nomenclature	NIIN	Net	MFHBF	MFHBF	Change	Avoidance
E-2C	Fuel Control	01-392-2784	$24,439	636	1521	-58%	$355,498
E-2C	Starter	01-316-0727	$10,731	618	974	-37%	$325,544
C-2	APU	01-364-7323	$35,133	1281	2086	-39%	$311,835
E-2C	Nav Computer	01-432-2467	$65,985	1910	3477	-45%	$267,641
FA-18E/F	Regulator Valve	01-469-1460	$63,042	607	1,293	-51%	$1,996,750
FA-18E/F	E/F Generator	01-455-3692	$81,727	629.07	830.93	-30%	$1,294,427
FA-18E/F	Bomb Control	01-480-0498	$50,014	517	1216	-38%	$836,018
FA-18E/F	E/F Axial Pump	01-455-3668	$68,602	629.07	830.93	-30%	$773,121
FA-18C	Transmission	01-296-0867	$61,373	3995	5856	-32%	$507,103
SH-60F	Cable Assy	01-467-4741	$21,159	491	848	-42%	$356,310
SH-60F	Transducer	01-486-8819	$48,737	464	778	-40%	$98,351
T-700C	Turbine Rotor	01-476-1840	$61,145	1225	1994	-39%	$778,173
H-60	Accessory Gearbox	01-353-3825	$82,477	5579	8972	-38%	$218,336
H-60	Rate Gyro	01-345-3117	$7,070	284	402	-29%	$188,850
H-60	Main Module	01-289-4810	$291,051	2789	3588	-22%	$453,692
H-60	Spindle Assy	01-238-2448	$32,475	1731	3167	-45%	$250,325
H-60	Spindle Assy	01-238-2442	$31,357	2335	3263	-28%	$89,180
H-60	Spindle Assy	01-238-2444	$31,775	1931	3167	-39%	$148,812
H-60	Main Module	01-289-4810	$291,051	2,789	3588	-22%	$648,132
S-3B	Servocylinder	01-193-2158	$21,483	1123	3148	-64%	$469,855
S-3B	Landing Gear	00-617-9551	$36,914	1685	4547	-63%	$464,693
S-3B	Electro Mech Actu	01-158-5975	$7,316	417	611	-32%	$188,157
S-3B	Flight Electronics	01-473-6699	$10,968	469	682	-31%	$150,722
P-3C	APU	01-471-6728	$62,074	1684	3972	-58%	$1,358,752
P-3 T-56	Fuel Control	01-076-5343	$14,488	1424	1996	-29%	$244,960
P-3C	Starter	01-462-4613	$11,031	2579	3917	-34%	$241,156
P-3C	Modem, Com	01-457-6468	$23,514	2728	4599	-41%	$229,587

AVDLR Consumption Review

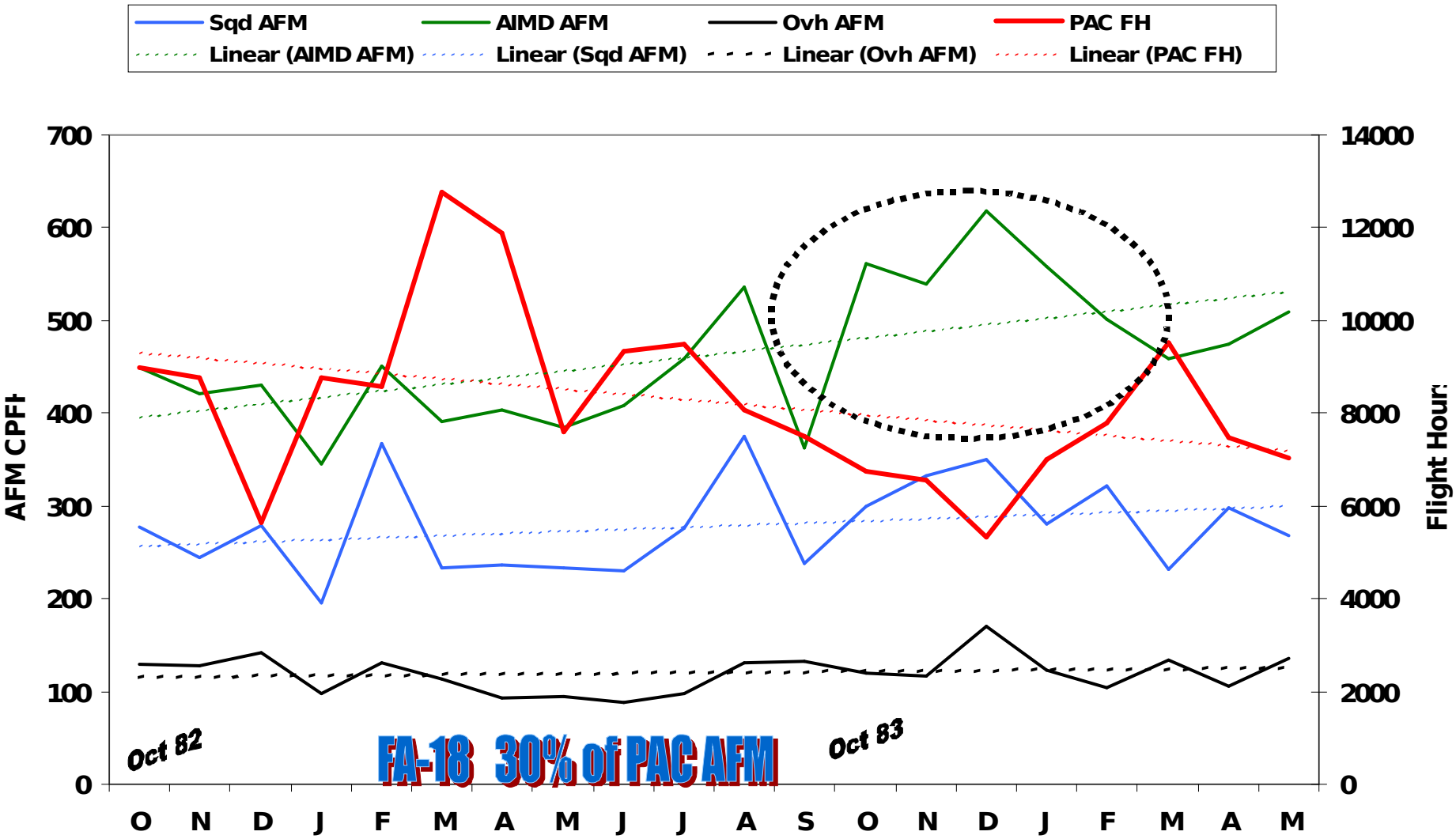
	AVDLR Consumption Review			Cog WING / AIMD			$17,007,007
			Current	FY 03	FY 04	Percent	Potential
Acft	Nomenclature	NIIN	Net	BCM TD	BCM TD	Increase	Avoidance
E-2C	Blade	01-454-0851	$16,492	13	24	85%	$362,824
J-52	Nozzle	01-315-1717	$8,822	173.8333	299	72%	$1,892,949
J-52	T-1 Turbine	01-350-6640	$140,431	27.41667	34	24%	$1,584,864
EA-6 Equip	Traveling Wave	01-506-5854	$25,236	16.33333	32	96%	$677,767
J-52	COMB CHAMBER	01-353-8344	$2,975	131.25	210	60%	$401,625
FA-18	Windshield	01-447-1104	$67,170	14.58333	21	44%	$738,870
FA-18F	Canopy	01-466-8705	$254,920	4.083333	7	71%	$1,274,600
FA-18C	Servocylinder	01-351-3373	$19,180	44.33333	57	29%	$416,480
SH-60F	Transducer	01-486-8819	$48,737	3	8	174%	$424,708
H-60	Bladefold Actuator	01-242-9588	$17,275	19	36	93%	$513,314
H-60	Stabilator	01-222-5123	$22,504	13	21	57%	$292,552
H-60	Main Module	01-289-4810	$291,051	4	6	47%	$956,310
H-60	Swashplate	01-221-2651	$90,979	4	5	43%	$233,946
T-700C	Turbine Rotor	01-476-1840	$61,145	15	27	78%	$1,240,370
H-60	Main Module	01-289-4810	$291,051	6	9	54%	$1,579,991
H-60	Main Rotary Blade	01-158-9679	$44,093	38	55	45%	$1,291,295
H-60	Spindle Assy	01-238-2448	$32,475	10	13	31%	$171,654
H-60	Spindle Assy	01-238-2442	$31,357	6	15	157%	$492,753
H-60	Spindle Assy	01-238-2444	$31,775	7	14	100%	$381,300

AFM Consumption Review

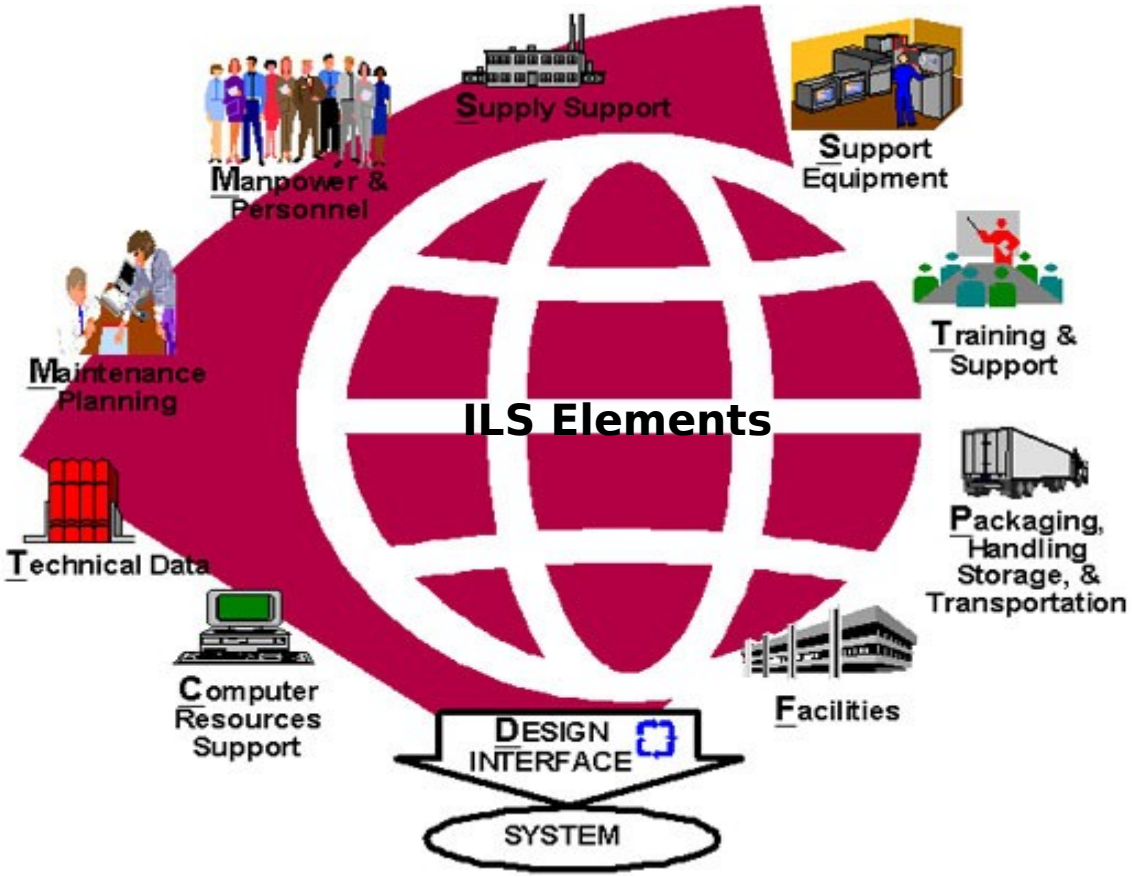
TMS	Nomenclature	NIIN	Unit Price	Total Price	PAC Qty	Squadron Use
E-2	PROCESSOR DIS	LLNEN5285	$20,000	$60,000	3	3 - VAW-112
E-2	THERMOCOUPLE	013140599	$288	$47,743	166	128 - VAW-113
E-2	BUSHING UPA 4	LLPDZ7100	$350	$46,200	132	132 -VRC-30 Det 1
E-2	THERMOCOUPLE	010746671	$493	$51,807	105	105 - VRS-30
E-2	CONNECTOR,SP	002015009	$5,845	$35,068	6	6 - VAW-113
E-2	CIRCUIT CARD	013408507	$5,640	$22,558	4	4 - VAW--113
E-2	FLAP, PARACH	013230895	$1,293	$21,975	17	10 - VAW-112
EA-6B	SHAFT ASSY	009712668	$19,909	$39,817	2	2 - VAQ-129
EA-6B	COUPLING HAL	001949702	$3,924	$39,238	10	8 - VAQ-140
EA-6B	SEALING COMPO	013687208	$1,380	$35,876	26	14 - VAQ-140
EA-6B	ELEC POWER M	012467178	$1,172	$35,159	30	10 - VAQ-136
EA-6B	CABLE ASSY-	012706754	$2,433	$34,057	14	9 - VAQ-131
EA-6B	TRANS,RECT	014758470	$11,588	$220,172	19	12 - VAQ-129
EA-6B	HEAT EXCHAN	008223032	$24,982	$149,890	6	5 - VAQ-133
FA-18	EJECTOR,JET	014545714	$19,766	$1,027,832	52	23 - VFA-115
FA-18	ANTENNA	014552545	$11,092	$266,208	24	11 - VFA-115
FA-18	FLAP,COWLING	014436021	$4,810	$153,920	32	15 - VFA-102
FA-18	E/F TRANSMIT	014658638	$13,454	$134,540	10	5 - VFA-41
FA-18	TRANSDUCE	015139059	$6,480	$84,240	13	9 - VF-2
FA-18	CHOCK, WHEEL	012094660	$245	$31,360	128	99 - VFA-125
FA-18	CABLE ASSEMB	014226386	$613	$30,041	49	49- VFA-192
FA-18	COVER, AIRCRA	010900232	$581	$25,564	44	43 - VFA-125
FA-18	SHIELD, AIRC	010604842	$624	$19,968	32	31 - VFA-125
FA-18	SHIELD,AIRCR	010727888	$520	$19,760	38	30 - VFA-125
FA-18	STRAP ASSEMB	013177792	$3,676	$110,288	30	25 -VFA-125

TMS	Nomenclature	NIIN	Unit Price	Total Price	PAC Qty	Squadron Use
S-3	WINDSHEILD P	010549512	$11,748	$187,968	16	7 - VS-21
S-3	HYD OIL COOL	013020181	$7,634	$68,703	9	9 - VS-35
S-3	HATCH ASSEMB	010313414	$10,972	$43,887	4	3 - VS-33
S-3	CABLE	014404824	$4,156	$41,558	10	7 - VS-33
S-3	WIRING HARNE	014914628	$759	$40,244	53	44 - VS-21
S-3	ANTENNA	010643698	$2,019	$38,360	19	14 - VS-21
S-3	RADOME	012567954	$2,920	$35,044	12	12 - VS-35
S-3	VALVE,CHECK	004423857	$1,114	$8,913	8	8 - VS-21
S-3	CABLE ASSEMB	010060884	$4,410	$66,155	15	11 - VS-41
S-3	SPRING	005002766	$2,067	$31,011	15	14 - VS-41
P-3	SHROUD,SEAT	011769086	$10,623	$84,982	8	5- VP-1
P-3	ANTENNA	012913522	$14,921	$59,685	4	4- VP-2
P-3	DISPENSER, R	219141127	$14,452	$57,808	4	3- VP-40
P-3	ANTENNA	013425799	$8,976	$35,904	4	4-VQ-1
P-3	ANTENNA,BLAD	013356587	$8,976	$35,904	4	4-VQ-1
P-3	COMPUTER,AIR	001763284	$542	$20,057	37	15-VP-4
P-3	CARTRIDGE, P	014566919	$1,586	$14,274	9	9-VQ-1
P-3	VALVE ASSEMB	007364694	$11,975	$119,749	10	All WING 2 / 24
P-3	TUBE PRESSUR	008876870	$3,062	$91,848	30	All WING 10 / WI
P-3	HOUSING,BEAR	011384531	$1,300	$38,989	30	All WING 2 / 24

PAC FA-18 AFM Cost Per Flight Hour Trend



PBL Applications

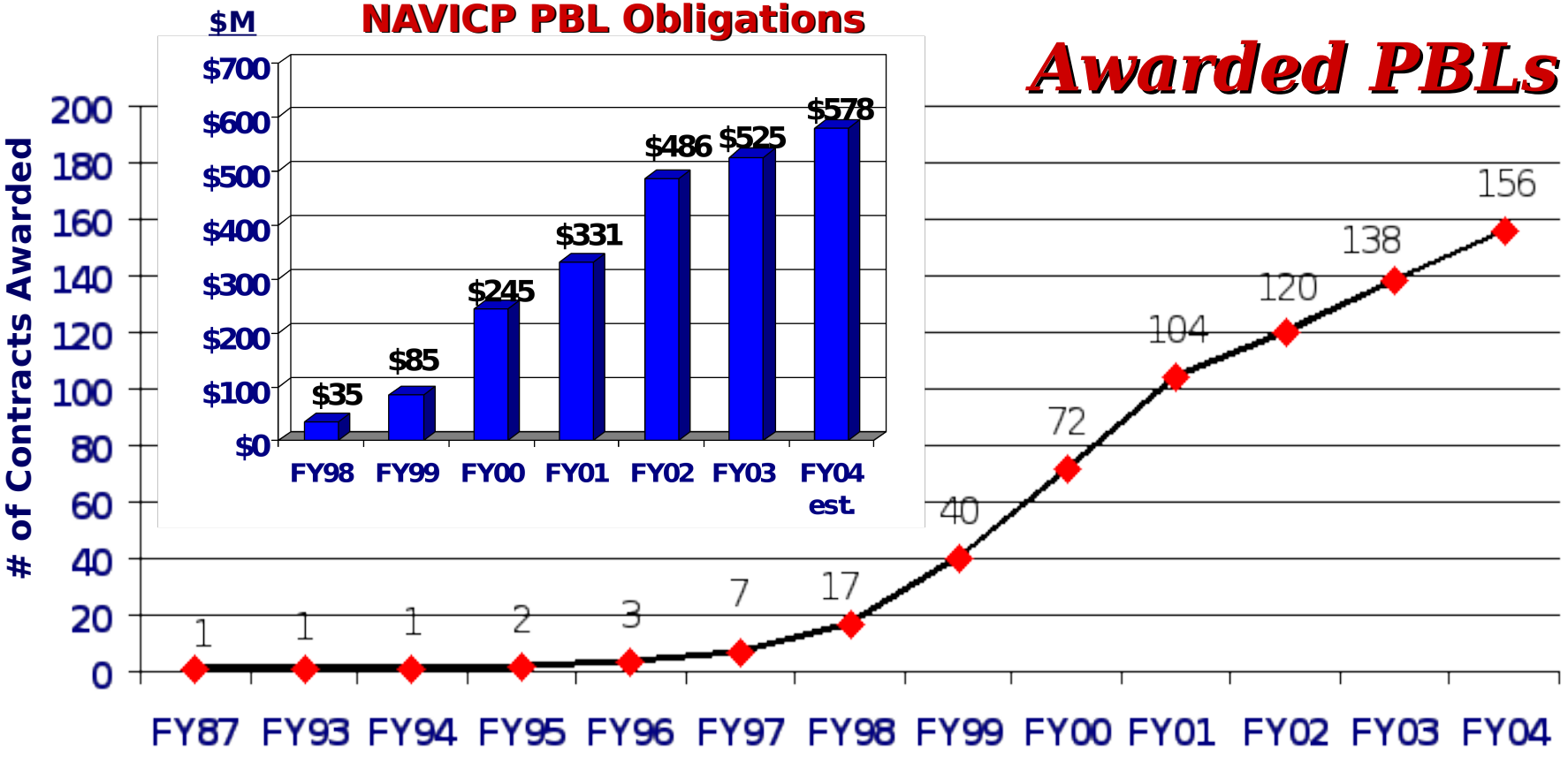


System Level

Sub-system Level

Component Level

System/Component Level



PBL Successes

- Improved Availability
  - CIWS improved from 80% to 89%
  - F-14 Targeting System improved from 73% to 90%
- Better Response Time
  - F/A-18 Stores Mgmt System decreased from 47 days to 7 days
  - Auxiliary Power Unit (APU) decreased from 35 days to 6 days
    - RTAT was decreased from 162 days to 38 days
- Guaranteed Reliability
  - Radar Warning Receiver increased 53%
  - H-60 FLIR increased 40%
- Reduced Inventory
  - Tires…no wholesale, no warehouse costs
  - APU…no wholesale, 40% decrease in retail inventory